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SNAP use among older adults

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SNAP USE AMONG OLDER ADULTS

A Thesis

Submitted to the Graduate Faculty of the
Louisiana State University and
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ABSTRACT

Older adults participate in the Supplemental Nutrition Assistance Program (SNAP) at much lower rates than the general population. Possible explanations for this disparity include stigma, lack of information, and lack of transportation. However, past research focusing on SNAP use among older adults is limited and utilizes age cohorts in their analyses that may not accurately reflect actual age differences in SNAP participation. This study explored four different models of age categorizations as they relate to SNAP participation rates among older adults over 55. Using a sample of 10,116 from the nationally representative Health and Retirement Study (HRS), the research used logistic regression analyses to test the four age categorization models. Results indicated that age added little predictive power to the SNAP participation model, and that no age categorization model predicted participation better than any other.

Keywords: SNAP, Food Stamps, elderly, older adults, aging, poverty, welfare

CHAPTER 1: INTRODUCTION

Werner (2011) estimated that approximately 40.3 million Americans (13%) were over age 65 in 2010, an increase of 5 million from the previous census. By 2030, the U.S. Department of Health and Human Services [HHS] Administration on Aging [AOA] (2011) projected that the population of older adults over 65 will increase to over 72 million. Additionally, they expected the Hispanic older adult population to more than triple by 2030, the largest growth of any ethnic group. Future projections by the HHS AOA (2011) also predicted that poverty among older adults will continue to be a growing problem as well. According to current federal poverty measures, older adults 65 and over experienced the lowest rates of poverty (9%), as opposed to the national average of 15.1% (DeNavas-Walt, Proctor, & Smith, 2011). Under the more comprehensive Supplemental Poverty Measure (SPM), which takes factors other than income into consideration (e.g., debt, medical expenses, etc.), the average poverty rate among all persons remains largely unchanged at 16% (Short, 2011). For adults over 65, however, the poverty rate increased to 15.9%, due largely in part to the population's high burden from out-of-pocket medical expenditures (Short, 2011). Older adults, as such, may be more vulnerable to poverty-related issues than previously thought.

Various governmental programs (e.g., Supplemental Security Income [SSI], Temporary Assistance for Needy Families [TANF], Social Security etc.) attempt to combat poverty and its consequences (Reese, n.d.). One program, the Supplemental Nutrition Assistance Program (SNAP; formerly the Food Stamp Program [FSP]), the largest food assistance program in the United States, provides assistance to participants for the purchase of food (Eslami, Filion, & Strayer, 2011). Older adults over 60 have historically participated at low rates, accounting for 8% of total SNAP participants, while accounting for over 18% of the United States population in

2010 (Eslami et al., 2011; Howden & Meyer, 2011). Consequently, researchers typically have not focused on the older adult population in SNAP research.

Older adults have been consistently left out of SNAP participation research, and only a handful of studies focus solely on older adults (Fuller-Thomson & Redmond, 2008; Haider, Jacknowitz, & Schoeni, 2003; Wu, 2009). Yet, these studies utilize seemingly arbitrary age groupings for older adults (often grouped by the decade). In addition, even the most detailed SNAP studies conducted by or on behalf of government agencies typically treat the older adult population as a homogenous group, often relegating them to the broad category of over 60 or over 65 (Cunyngham, 2010; Eslami et al., 2011; Leftin, Eslami, & Strayer, 2011; Reese, n.d.; Wolkwitz, 2007). Some SNAP studies focusing on the general population (Algert, Reibel, & Renvall, 2006; Bhattarai, Duffy, & Raymond, 2005; Ribar, Edelhoch, & Liu, 2010) attempt to further break down the elderly category, but often use smaller samples or outdated data compared to governmental studies. The purpose of this thesis is to explore the effect of age on SNAP participation among older adults. The literature review provides a brief overview of hunger and food security, the Older Americans Act (OAA), SNAP history and intent, SNAP eligibility and participation, rational choice theories, factors affecting SNAP participation, and age categorization. First, the paper provides a brief overview of poverty and its measurement, as poverty is an important factor in understanding food insecurity and its relationship to SNAP.

CHAPTER 2: LITERATURE REVIEW

Poverty

The federal government defines poverty in two distinct but similar ways: poverty thresholds used by the U.S. Census Bureau and poverty guidelines used by HHS (2012). Poverty thresholds are more precise estimations, used mainly for government statistics and reporting purposes, while poverty guidelines are a simpler measure used mainly for program eligibility (HHS, 2012). However, both measures rely on earned income in relation to household size and composition. Poverty thresholds also take age of the householder into account (HHS, 2012). For example, the poverty threshold for a family of two containing at least one household member over 65 is \$13,609, while the poverty guideline for the same family size is \$15,130 (except in Alaska and Hawaii) (HHS, 2012). Many poverty scholars (e.g., Azpitarte, 2012; Blank & Greenberg, 2008; Fremstad, 2010; Wheaton & Tashi, 2010) agree that a poverty measurement that relies solely on income is deeply flawed. In 1995, the National Academy of Sciences (NAS) suggested the use of a more comprehensive measure of poverty, including considerations for in-kind benefits, taxes, and major expenses, such as child support and health costs (Citro & Michael, 1995). Following the NAS report and recommendations of other scholars, the federal government developed the SPM that will be used alongside Current Population Survey and American Community Survey federal poverty threshold estimates in the future and includes consideration for major family expenses, housing, transportation, and regional costs of living, as well as many other factors (Short, 2011). As a result of rising poverty rates, the prevalence of other poverty-related issues may be expected to rise as well. One such issue, food insecurity, has been closely linked to poverty (Coleman-Jensen, Nord, Andrews, & Carlson, 2011; Deeming, 2011).

Hunger and Food Security

A brief overview of the concept of hunger is an essential part of understanding the similar concept of food insecurity. A broader, more recognizable concept than food security, hunger is physiological discomfort in response to a need for food (U.S. Department of Agriculture [USDA], 2012a). However, others (World Food Programme, n.d.; World Hunger Education Service, n.d) conceptualize hunger as chronic malnutrition or malnourishment. In addition to inconsistencies in definitions of hunger, no valid measures of hunger exist in the United States (USDA, 2012a). As a result, the USDA (2012a) utilizes the measurement of food security, which measures the economic characteristics which may lead to hunger.

Anderson (1990) defined food security as a person's ability to access safe and healthy foods without the use of illegal or socially unacceptable means. Conversely, food insecurity is any lack of legal or socially acceptable means of access to safe and healthy foods (Anderson, 1990). Currently, the USDA (2012a) uses these definitions of food security and insecurity in its research. An individual's food security may be categorized as high, marginal, low, or very low (USDA, 2012a). Highly food secure persons report no problems with access to safe and healthy foods, while marginally food secure persons report very little problems with access to safe and healthy foods; these individuals are generally described as food secure (USDA, 2012a). On the other hand, low and very low food secure individuals report significant disruptions in access to safe and healthy foods or adequate quantities of food, and, are thus, considered food insecure (USDA, 2012a).

Food insecurity is a highly prevalent issue in the United States. Coleman-Jensen et al. (2011) reported that 14.5% of U.S. households were food insecure, with 5.4% reporting very low food security at least once during 2010. Of those 14.5% of households, almost 60% reported

receiving benefits from SNAP, Women Infants and Children, and/or the National School Lunch Program. On average, food secure households reported spending nearly 30% more money on food than food insecure households, including those receiving SNAP benefits (Coleman-Jensen et al., 2011). In terms of median weekly food expenditures, food secure individuals spend approximately \$45 per week, while food insecure individuals spend \$34 per week (Coleman-Jensen et al., 2011). Those who were African-American, Hispanic, single-parents, had low-income, or were a part of a nontraditional household with children (e.g., grandparent-headed households) reported above-average rates of food insecurity when compared to the national average (Coleman-Jensen et al., 2011). Older adults, however, do not seem to be as affected by food insecurity as other demographic groups.

Rates of food insecurity among older adults tend to be below the national average. Coleman-Jensen et al. (2011) reported that about 8% of households containing at least one older adult over 65 experienced food insecurity at least once in 2010. Older adults living alone were about 23% more likely than older adults living with others to have experienced very low food security in 2010 (Coleman-Jensen et al., 2011). However, research comparing rates of food insecurity among age cohorts within the older adult population is rare, as the older adult population is generally treated as a homogenous group, and even official government reports by the USDA do not report on age differences in food insecurity among age cohorts of those 60 and older (Coleman-Jensen et al., 2011). At least one study in the United Kingdom found that older adults over 80 are at significantly higher risk for food insecurity than older adults ages 60 to 79 (Deeming, 2011). The same study also showed that low-income, single male, and disabled older adults have a significantly higher than average risk of food insecurity. Various food programs

attempt to combat food insecurity, but SNAP remains the program that is the most utilized in the United States (USDA, 2012c).

Older Americans Act

The federal government enacted the OAA in 1965 in order to bestow grants to states for the purposes of developing services, research, and training related to aging (U.S. Government Accountability Office [GAO], 2012). The OAA also created the AOA, the federal organization that serves as the developer and administrator to these grant programs and publisher of reports and statistics related to the older adult population (GAO, 2012). Some services administered by the OAA include transportation, personal care, community resource locators, employment, elder abuse services, caregiver respite, and nutrition programs (GAO, 2012). In particular, the Nutrition Program (also known as the Elderly Nutrition Program [ENP]) created under Title III of the OAA provides nutrition education, counseling, and nutritionally-balanced, cooked meals to older adults over 60 both in-home and in community settings (Colello, 2011). The stated purposes of the OAA Nutrition Program are to reduce food insecurity, illness, and social isolation of vulnerable or low-income older adults, but the program is not means-tested (Colello, 2011). Meals served in the community setting are available for all adults over 60, while in-home meals are available only to adults over 60 who are homebound, regardless of income (Colello, 2011). In fiscal year 2010, the OAA Nutrition Program provided more than 96 million meals to over 1.7 million community program participants (AOA, 2012). Additionally, the OAA Nutrition Program provided about 145 million meals to about 868,000 in-home service participants that same year (AOA, 2012).

SNAP History and Intent

The 1960s and 1970s

The FSP was enacted in 1964 as an optional pilot program for any states wanting to participate (USDA, 2012c). The intent of the program was to augment the agriculture industry, while simultaneously decreasing food insecurity among those in poverty (USDA, 2012c). The original program also required the purchase of physical stamps which could, in turn, be used to acquire any food items, with the exception of soda and foods considered luxury items (USDA, 2012c). During the 1970s, the FSP saw massive expansion, including national implementation in all counties, standardization of eligibility requirements, establishment of outreach and educational programs, and reorganization of the application process, among countless other reforms (USDA, 2012c). This expansion led into the 1980s, where many of the previous expansions were scaled back.

The 1980s to the Present

During 1981 and 1982, FSP eligibility and scope became more restrictive with the elimination of FSP in Puerto Rico, the addition of the net and gross income tests, and cuts from outreach funding, among other cuts (USDA, 2012c). By the late 1980s and early 1990s, the FSP expanded again slightly with the addition of categorical eligibility for those receiving SSI or Aid to Families with Dependent Children, an increase in benefits, and the creation of electronic benefits transfer (EBT) (USDA, 2012c). In 1996, the Personal Responsibility and Work Opportunity Reconciliation Act (PRWORA) imposed stricter eligibility requirements, like work requirements, for the FSP, including a strict time limit on benefits for un- or underemployed single adults without dependents, disabilities, or illnesses (O'Connor, 2002). PRWORA also imposed a ten-year waiting period for legal immigrants to receive food stamp benefits

(O'Connor, 2002). Reforms in the late 1990s provided extra funding for employment and training programs and allowed individual states to waive the work requirement for up to 15% of its single, able-bodied population (USDA, 2012c). Finally, the 2000s brought yet more FSP reforms, including changing the program's name to SNAP, easing restrictions on legal immigrants, nationalizing the EBT system, and giving individual states more latitude in their implementation of SNAP (USDA, 2012c). In spite of the growing freedom for states to implement SNAP, eligibility requirements are still nationally mandated.

SNAP Eligibility and Participation

To be eligible for SNAP, families must have less than \$2000 in assets (e.g., bank accounts and vehicles), gross income must be below 130% of poverty guidelines, and net income must be below 100% of poverty guidelines (USDA, 2012b). Families receiving TANF, General Assistance, or SSI are categorically eligible to receive SNAP, and able-bodied adults must hold a job or join in workfare or an employment and training program, or else their SNAP benefits will be limited to three months every three years (USDA, 2012b). Families with persons over 60 or disabled persons must only meet the net income test and may have up to \$3,250 in assets (USDA, 2012b).

In 2010, nearly 19 million households received SNAP benefits (Eslami et al., 2011). Approximately 85% of these households fell under 100% of the poverty guideline, and nearly half fell under 50% of the federal poverty guideline (Eslami et al., 2011). The most current USDA statistics estimate, that during an average month in 2009, 72% of persons eligible for SNAP actually received benefits, an increase of 18 percentage points since 2002 (Leftin et al., 2011). For older adults over 60, approximately 88% participating in SNAP in 2010 received either Social Security or SSI benefits, but 6% of older SNAP participants had no income from

earned or unearned sources. An overwhelming majority (80%) of older SNAP beneficiaries lived alone in 2010 (Eslami et al., 2011). Eligible older adults over 60, unlike the general population, participated at a rate of 34.3% on an average month in 2009, a slight decrease from the 2008 rate and the lowest among the 4 identified age groups in the study (Leftin et al., 2011). In comparison, eligible households with children younger than four participated at a rate of 94.6 in an average month in 2009 (Leftin et al., 2011). Nevertheless, the participation rate among eligible older adults over 60 has been steadily rising from the 2002 rate of 26%, and researchers have been interested in finding a cause for these changes in participation rates (Leftin et al., 2011). Leftin et al. (2011) suggested that this increasing rate of participation may have been associated with the economic downturn of the early 2000s.

Theoretical Framework: Rational Choice Theories

Traditionally, researchers have explored SNAP participation under the lens of rational choice theory, which states that persons will rationally and systematically make choices that will optimize their benefits (Kroneberg & Kalter, 2012; Wu, 2009). FSP participation research at least partially supports this theory, showing that households were more likely to take up food stamps if their expected monthly SNAP benefits were likely to be higher, as calculated using income and asset data from the sample studied (Daponte, Sanders, & Taylor, 1999). The study, therefore, provided some evidence that FSP participants follow a rational choice framework in choosing to utilize the program based at least partially on potential food stamp benefit amounts (Daponte, Sanders, & Taylor, 1999). Blank and Ruggles (1996) provide further evidence for the cost-benefit framework, finding that women who were eligible for FSP but nonparticipating had, on average, lower expected food stamp benefits when compared to participating women.

Critics of rational choice theory have pointed out, however, that the framework operates under the assumptions that individuals are fully-informed and have the cognitive ability and time to make the most rational decision (Mallard, 2012). Research also supports the criticism that individuals may not always be fully-informed, providing evidence that nonparticipation is affected by the belief that one is ineligible or by being unaware of one's eligibility (Daponte et al., 1999; Levedahl, 1995). Thus, the theory of bounded rationality seems to add a valuable dimension to the simple framework of rational choice/cost-benefit in relation to SNAP participation. Bounded rationality theory builds upon rational choice theory by encompassing the caveats that individuals may not always be fully informed or have the proper cognitive ability or time to make perfectly rational decisions (Mallard, 2012). Bounded rationality is not without its issues, nevertheless. Haider et al. (2003) found in their study of factors affecting SNAP participation among older adults that cognitive impairment did not significantly impact participation rates. Similar to bounded rationality, Moffitt (1983) proposed a utility-maximizing framework that incorporates the concept of psychological stigma as a social cost in addition to economic costs and benefits.

Moffitt's (1983) theory may be especially prudent for older adults whose decision to participate in SNAP seems to be heavily influenced by perceived economic benefits and costs, social stigma, and inadequate or incorrect information regarding their eligibility, as evidenced by previous research (Gabor, Williams, Bellamy, & Hardison, 2002; Wu, 2009). While the rational choice theories provide useful information in explaining possible factors influencing SNAP take-up rates among older adults, the direct testing of these theories is beyond the scope of the current research.

Factors Affecting SNAP Participation

In the years following the passage of the 1996 PRWORA, participation in public programs declined precipitously (Schram & Soss, 2001). In an editorial to *The New York Times*, Bill Clinton (2006) declared the reform a success, citing a decrease in welfare rolls and an increase in working mothers. However, as Schram and Soss (2001) pointed out, the drop in rolls may be attributable to the much stricter eligibility standards and a booming economy rather than a decrease in dependency. Indeed, Ratcliffe, McKernan, and Finegold (2008) found that more relaxed eligibility requirements regarding vehicle exemptions, immigrants, and length of time between eligibility re-certifications stimulated participation in SNAP. A study by Hanratty (2006) also found that more relaxed standards for SNAP re-certification increased SNAP participation. Additionally, FSP participation began steadily climbing again in 2002, which may have been a result of the economic downturn beginning in the early 2000s (Leftin et al., 2011). Thus, the connection between the passage of the PRWORA and FSP/SNAP, welfare roll decline is unclear.

In addition to stricter policy standards, persons receiving public assistance (including FSP/SNAP) also encounter other barriers to participation. For FSP in particular, Bhattarai et al. (2005) found evidence that social stigma, lack of or incorrect information about the program or eligibility, and burdensome application requirements are all barriers to participation. Nonparticipation among older adults is not fully understood, however. Gabor et al. (2002) found that stigma, language, incorrect eligibility information, and lack of transportation were the most common barriers to participation among older adults, with stigma being the most common. Participants in that study also reported feeling that FSP was marketed toward younger families and having more difficulty in applying for and receiving FSP benefits than younger participants.

As with food security studies, FSP participation studies comparing age groupings among older adults are rare. One such study by Haider et al. (2003) explored factors affecting FSP take-up rate among older adults over 50 using data from the 1998 and 2000 waves of the HRS. The sample sizes were 19,590 and 17,067 for each year, respectively. Age categories were broken down as follows: 50—59, 60—69, 70—79, and 80 and over. The study tested seven different methods of determining eligibility by using criteria ranging from most accurate (as close to actual FSP eligibility criteria as possible) to least accurate (using gross income test only). Across all seven methods, take-up rates were highest among 50—59 year olds and declined steadily as age increased. Using the most accurate eligibility criteria, participation rates were 41.4% among 50—59 year olds, 31.2% among 60—69 year olds, 25.0% among 70—79 year olds, and 20.8% among those over 80 years olds. In addition, these age differences persisted, even when controlling for possible respondent error to HRS questions regarding FSP receipt. Finally, the study also analyzed logit models to test the effect of various “behavioral factors,” (Haider et al., 2003, p. 1081) such as employment status, physical impairment, and cognitive impairment, on FSP participation through the use of a cost-benefit framework. Age differences persisted even after controlling for these various factors, and cognitive impairment did not significantly impact FSP participation. In their FSP participation model that did not control for cognitive impairment (model 4), being female, African-American, Hispanic, and having difficulty dressing positively impacted participation, while higher levels of education, expectation of higher FSP benefit amounts, higher income, homeownership, and vehicle ownership negatively impacted participation (Haider et al., 2003). Interestingly, with the addition of a cognitive impairment indicator into the model, being African-American, Hispanic, a vehicle owner, or having lower education levels were no longer significant predictors of FSP receipt. Cognition was rated on a

10-point scale (with a score of 10 being no cognitive impairment) and based on a 10-question supplement to the HRS. The addition of the cognitive impairment indicator also revealed that higher assets were a negative predictor of FSP take-up. In the model including cognitive impairment, being female, having higher expected FSP benefits amounts, income, and homeownership remained significant predictors of FSP participation. Thus, the study provides strong evidence that neither miscalculation of eligibility nor behavioral factors are the source of age differences in FSP take-up. Haider et al. (2003), nonetheless, did reveal several possible predictors of FSP participation in older adults.

Like the previous study, Wu (2009) also examined factors affecting FSP participation among older adults over 60. The study primarily used longitudinal data from the Panel Study of Income Dynamics from the years 1980 to 2005, with a sample size of 3,889 older adults (and 38,269 person-year observations). The study found that when compared to adults 30—59, older adults over 60 have consistently participated in FSP at lower rates, even when controlling for changes in eligibility requirements over the observed period. Over 30% of this difference in participation rate was accounted for by the expectation of lower FSP benefits, as calculated by respondent income and asset data, and higher economic well-being, as measured by food security and poverty measures. Finally, Wu (2009) showed that older adults who reported believing that they were FSP ineligible, did not know their FSP eligibility, participated in the ENP, were male, were white, or had higher education levels were less likely to participate in FSP. The same study found that higher expected FSP benefit amounts, family size, and SSI or TANF participation positively impacted FSP participation.

Finally, Fuller-Thomson and Redmond (2008) examined various factors affecting FSP participation among older adults over 65. Their study used a sample of 14,724 individuals from

the nationally representative 2003 wave of the American Community Survey. The study used age groupings of 65—74, 75—84, and over 85, but the results were consistent with the previous results of Haider et al. (2003), in that a logistic regression showed that FSP participation rates declined with age, while controlling for various other factors including gender, self-reported physical impairment, welfare receipt, education, and homeownership, among many others. Women, non-homeowners, persons with disabilities, and SSI and welfare recipients had higher odds of receiving FSP benefits (Fuller-Thomson & Redmond, 2008).

Age Categorizations

Aging refers to the universal process whereby persons experience functional, cognitive, and social changes over a lifetime (Settersten, Jr. & Mayer, 1997). In common vernacular, age most often refers to the concept of *chronological age* or the number of years since birth. However, Settersten, Jr. and Mayer (1997) noted that, for research purposes, chronological age alone is essentially an empty variable, as it is simply a numerical representation of the length of time a person has been living. As such, scholars have attempted to conceptualize age in several other useful ways. One of these alternative conceptualizations, *biological age*, refers to a person's overall physiological functioning (Birren & Cunningham, 1985). *Social age* describes a person's behavioral habits and social roles in relation to others in society, which is influenced heavily by societal expectations of age-appropriate behaviors (Birren & Cunningham, 1985). *Psychological age* generally refers to behavioral and cognitive adaptability and changes throughout one's lifespan (Birren & Cunningham, 1985). Most social research utilizes chronological age as a proxy indicator for these other conceptions of age (Settersten, Jr., & Mayer, 1997). Thus, the current research uses a chronological definition of age as well.

Researchers are inconsistent in defining old age or older adults. Research and policy often treat older adults as a homogenous group spanning several decades (e.g., 65 and older) (Bytheway, 2005). Bytheway (2005) argued that this labeling is a reflection of ageist attitudes in researchers. Thus, gerontologists have developed various subcategories of older adults. Baltes and Smith (2003) outlined the age categories known as Third Age (60—79) and Fourth Age (over 80), distinctions based off of likelihood of mortality and functional declines. More recently, common age categories in research are young-old (65—74), middle-old (75—84), and oldest-old (over 85) (LaPierre & Hughes, 2009; Neugarten, 1974; Rosenwaike, 1985; Zizza, Ellison, & Wernette, 2009). The ideas of young-old (55—74) and old-old (over 75) categorizations were first conceptualized by Neugarten (1974). The first usage of the term *oldest-old* was in an article by Rosenwaike (1985). The most contemporary conception of the young-old (65—74), middle-old (75—84), and oldest-old (over 85) categories were used in this study (LaPierre & Hughes, 2009; Zizza, Ellison, & Wernette, 2009). Similarly, the studies that are the most relevant to the current research utilized decade-cohorts with an open-ended oldest age category (Fuller-Thomson & Redmond, 2008; Haider et al., 2003; Wu, 2009). Bytheway (2005) warned that even the most contemporary older age subcategories may be flawed and arbitrary. For example, the elderly category generally begins at 60 or 65 because it is retirement age in many regions, and the oldest-old category is almost always open-ended (e.g., 85 and older) (Bytheway, 2005). Both examples show that contemporary categorizations neither represent older adults in general nor the upper extreme of the age spectrum accurately (Bytheway, 2005). Furthermore, Settersten, Jr. and Mayer (1997) argued that researchers often use these arbitrary age cohorts without critical thought and take them for granted as valid. Therefore, the current study seeks to directly explore the relationship of Third and Fourth Age groupings; young-old,

middle-old, and oldest-old groupings, generic decade-cohorts; and age as a continuous variable to SNAP participation.

Hypotheses

Based on previous studies, the current proposal predicts that older age will negatively impact SNAP participation rates among 2010 HRS participants who are over the age 55.

H1: Those in the Fourth Age (80 and over) category will have lower odds of SNAP participation when compared to those in the Third Age (60—79) category.

H2: Those in the oldest-old (85 and over) age category will have lower odds of SNAP participation when compared to those in the young-old (65—74) and middle-old age (75—84) categories.

H3: Those in the 95 and over decade-cohort will have lower odds of SNAP participation when compared to those in the younger decade-cohorts (55—64, 65—74, etc.).

H4: As age increases, odds of SNAP participation will decrease.

H5: Continuous age will be a better predictor of SNAP participation when compared to Third Age (60—79) and Fourth Age (80 and over).

H6: Continuous age will be a better predictor of SNAP participation when compared to young-old (65—74), middle-old (75—84), and oldest-old (85 and over).

H7: Continuous age will be a better predictor of SNAP participation when compared to generic decade-cohort groups (55—64, 65—74, etc.).

CHAPTER 3: METHODS

This chapter describes the methods used to test the hypotheses outlined at the end of Chapter 2. It begins with a discussion of the sample and provides operational definitions of variables. Finally, it discusses the research design and methods used.

Data

The study uses data from the University of Michigan's publically available Health and Retirement Study (HRS). HRS is a biannual, longitudinal panel study that began in 1992 with a sample of households containing at least one non-institutionalized adult between 51 and 61 years old. The HRS survey collects data on a broad range of dimensions, including income, health, and social characteristics of respondents. The survey is completed mostly via phone interview, but some surveys were completed face-to-face under extenuating circumstances. The response rate for the 2010 wave of the HRS survey was unavailable when downloaded, since it is an early version of the dataset; however, the response rate for both the 2006 and 2008 waves was 88.6% (HRS, 2011).

Sample

Since its inception, the survey has changed its sample of approximately 20,000 household financial units to include all adults over 50, and it also oversamples Hispanic and black populations (HRS, 2011). The survey utilizes a multistage area probability sampling technique (see Appendix A) to ensure representativeness, adding new participants every six years in order to ensure that the sample continues to remain nationally representative of the older adult population over 50 (HRS, 2011). In line with previous research by Haider et al. (2003), the current research intended to limit the studied sample to respondents from the 2010 wave who were over 50 and answered questions regarding SNAP receipt. However, the early version of the 2010 HRS dataset (used in this study) does not yet include demographic data from new

respondents between the ages of 50 and 54. Additionally, in some rare cases, respondents under 50 were included in the dataset and were thus excluded from the current study (RAND Corporation, 2012). Therefore, the current research limited the sample to respondents from the 2010 who met the following criteria: over 55, the oldest person in the household, and answered all questions used in this analysis. Applying these criteria, the final sample size for the current study was 10,116. After the data were weighted, the total number of respondents with only a non-zero weight that were included for all logistic regression analyses was 9,635. Respondents who were deceased or institutionalized had a zero weight in the sample.

Variables

This study included one outcome variable, 2010 household SNAP participation. The data were captured with the following question: *Were there any months in 2010 when you (or other family members who may have been living (here/there)) were receiving government food stamps?* The level of measurement for SNAP participation was nominal (nonparametric) and response options were *yes*, *no*, *don't know*, and *refused*. *Yes* and *no* responses were coded as 1 and 0, respectively, while *don't know* and *refused* were excluded from all analyses.

The study included one independent variable, age. The questionnaire collected this data via the following question: *In what month, day and year were you born?* Because specific birthdates are considered restricted data, ages were pre-computed and included in the core HRS dataset. The level of measurement for age was ratio (parametric) and was reported as a numerical value in years. From the ratio level age variable three other operational definitions of age were constructed. Third Age was defined as the age group between 60 and 79, while Fourth Age was defined as the age group 80 and over. Young-old, middle-old, and oldest-old categories were operationalized as the age groups of 65 to 74, 75 to 84, and 85 and over, respectively. Finally,

generic decade-cohorts were defined as follows: 55 to 64, 65 to 74, 75 to 84, 85 to 94, and 95 and over. Due to the small number ($N = 1$) of respondents between 105 and 114, the 94 to 104 and 105 to 114 categories were collapsed into a 95 and over category.

The study included eight control variables: educational attainment, gender, race, Hispanic, difficulty dressing, food budget adequacy, household income, and household assets. Educational attainment data were collected via the following question: *What is the highest grade of school or year of college you completed?* Response options were *no formal education, grades 1-11, high school, some college, college grad, post college, don't know*, and *refused*, and the level of measurement was ordinal (nonparametric). Responses were collapsed into two categories, less than high school and high school diploma or GED and above, and recoded as 0 and 1, respectively, while *don't know* and *refused* were excluded from all analyses. The HRS questionnaire collected gender data through the following question: *Is [respondent's first name] male or female?* The level of measurement for gender was nominal (nonparametric), and response options were *male* and *female*, which were coded as 0 and 1, respectively. The HRS questionnaire collected race data through the following question: *What race do you consider yourself to be: White, Black or African American, American Indian, Alaska Native, Asian, Native Hawaiian, Pacific Islander, or something else?* The level of measurement for race was nominal (nonparametric), and response options were *White/Caucasian, Black/African American, American Indian, Alaska Native, Asian, Native Hawaiian, Pacific Islander, Other, don't know*, and *refused*. In the dataset, these responses were collapsed into *White/Caucasian, Black/African American*, and *Other* categories. Due to a relatively small *Other* category, *White/Caucasian* responses were coded as 0, while all other valid responses were collapsed into a nonwhite non-Hispanic category and coded as 1 in the current study; *don't know* and *refused* responses were

excluded from analyses. Data for the Hispanic variable were captured by the following question: *Do you consider yourself Hispanic or Latino?* The level of measurement for the Hispanic variable was nominal (nonparametric). Response options were *yes*, *no*, *don't know*, and *refused*. A *yes* response was coded as 1 and a *no* response as 0, while *don't know* and *refused* responses were excluded from all analyses. Data for the difficulty dressing variable were captured by the following question: *Because of a health or memory problem do you have any difficulty with dressing, including putting on shoes and socks?* The level of measurement for the difficulty dressing variable was nominal (nonparametric). Response options were *yes*, *no*, *don't know*, and *refused*. Furthermore, if the respondent volunteered that he or she did not or could not perform the task of dressing at all, the response was recorded as *don't do* or *can't do*. A *yes*, *don't do*, or *can't do* response was coded as 1 and a *no* response as 0, while *don't know* and *refused* responses were excluded from all analyses. Food budget adequacy data were collected via the following question: *[Since [financial respondent]'s last interview month/In the last two years], have you always had enough money to buy the food you need?* Response options were *yes*, *no*, *don't know*, and *refused*. A *yes* response was coded as 1 and a *no* response as 0, while *don't know* and *refused* responses were excluded from all analyses.

HRS income data were collected through numerous questions regarding the following categories of income: earnings, capital income, pensions and annuities, SSI and Social Security disability, Social Security retirement, unemployment and worker's compensation, other government transfers, and other types of income. Pre-calculated and included as part of a separate dataset, totals from each type of income for each respondent and his or her spouse were summed in order to calculate a yearly household income, using imputed income values as appropriate. The level of measurement for household income is ratio (parametric) and was

reported as a numerical value in dollars. Due to a positively skewed distribution (i.e, the data are primarily clustered on the low end of the distribution), the household income variable was transformed using a $\log_{10}(x)$ function before analyses.

HRS asset data were collected through numerous questions regarding various categories of assets some of which included real estate, vehicles, businesses, stocks, bank accounts, bonds, houses, and trusts. The total household asset variable was pre-calculated and included as part of a separate dataset, where total household debt (e.g, loans, mortgages, etc.) were subtracted from the summed total of each type of asset for each household, using imputed income values as appropriate. The level of measurement for household assets was ratio (parametric) and was reported as a numerical value in dollars. Due to a positively skewed distribution, the household asset variable was transformed using a $\log_{10}(x)$ function before analyses.

Research Design and Analysis

The current study conducted a secondary data analysis using a cross-sectional design to investigate the SNAP participation of older adults at a single point in time (the year 2010), as opposed to a longitudinal design that would investigate outcomes over time (Rubin & Babbie, 2010). Descriptive statistics, such as the mean and standard deviation, were reported for parametric variables, while frequency distributions and percentages, were reported for nonparametric variables. Because 2010 SNAP participation was a dichotomous dependent variable (yes/no), the current study used a logistic regression analysis to predict the relationship between four different models of age and SNAP participation, while controlling for educational attainment, gender, race, Hispanic ethnicity, difficulty dressing, food budget adequacy, household income, and household assets (Burns & Burns, 2009). The study used five different models to test for differences in the prediction of SNAP participation in 2010 using four

differing age conceptualizations. Model A analyzed the relationship between the control variables and odds of participating in the SNAP program in 2010. Model B added to Model A the Third and Fourth Age groupings (60—79 and over 80), as outlined by Baltes and Smith (2003). Model C added to Model A the young-old, middle-old, and oldest-old groupings (65—74, 75—84, and over 85), (LaPierre & Hughes, 2009; Neugarten, 1974; Rosenwaike, 1985; Zizza, Ellison, & Wernette, 2009). Model D added generic decade cohorts (55—64, 65—74, etc.) to Model A. Finally, Model E added age as a continuous variable to Model A. Each analysis utilized bootstrapping in order to correct any effects that sample weighting may have had on confidence intervals and standard errors of β coefficients (Norušis, 2010). Bootstrapping works by resampling a dataset a specified number of times (in this case 1,000) and calculating test statistics for each sample (Norušis, 2010). For each model, overall chi-squared statistics, Nagelkerke pseudo R^2 values, and Hosmer-Lemeshow goodness-of-fit significance values were reported. The Nagelkerke pseudo R^2 statistic indicates a model's improvement when compared to a model with no predictors (Burns & Burns, 2009). A higher Nagelkerke R^2 value indicates a greater effect size with possible values ranging from 0 to 1 (Burns & Burns, 2009). The Hosmer-Lemeshow test analyzes the fit of the predictive model to the given dataset, with a significant finding indicating that the model does not fit the data well (Burns & Burns, 2009). For all variables within each model, β coefficients, $\exp(\beta)$ odds ratios, and 95% confidence interval values were also reported. Nagelkerke R^2 values were compared across the five models in order to identify any improvements attributed to the addition of age. The $\exp(\beta)$ odds ratios of each variable were compared on each variable to identify changes in predictor variables across the five models. The research proposal was submitted to and approved by the Louisiana State University Institutional Review Board with exemption status (see Appendix B).

CHAPTER 4: RESULTS

This chapter reports the results of descriptive analyses for the total sample and logistic regression analyses for each of the five models outlined in Chapter 3. The chapter begins with a discussion of sample frequencies, percentages, and means. Then the chapter reports the test statistics from Model A. Finally, the chapter concludes with a discussion of between-model comparison of regression results.

Descriptive Statistics

Descriptive analyses of the sample yielded the following weighted percentages and weighted means. See Tables 1—4 for unweighted frequencies, percentages and means. In the studied sample of respondents, 7.3% received SNAP in 2010, 17.3% did not graduate from high school, 46.8% were female, 14.2% were nonwhite non-Hispanic, 7.1% were Hispanic, and 11.6% experienced difficulty dressing. In terms of food budget adequacy, 7.8% experienced hardship in the past two years. Regarding the Third and Fourth age model, 64.6% of respondents were in the Third Age cohort, 19.2% were in the Fourth Age cohort, and 16.2% were in neither cohort. The young-old category encompassed 30.9% of the sample, while the middle-old and oldest-old categories encompassed 20.6% and 9.8% of the sample, respectively. A sizeable portion of the sample (38.7%) did not fall into the young-old, middle-old, or oldest-old categories. In terms of generic decade-cohorts, 38.7% of the sample was 55—64, 30.9% was 65—74, 20.6% was 75—84, 9.1% was 85—94, and 0.7% was over 95. The mean age for the sample was 69.67 ($SD = 9.87$) with a range of 53. The average household income and assets for the sample were \$63,222.38 ($SD = 112,331.88$) and \$449,489.30 ($SD = 970,946.40$), respectively.

Table 1
Frequencies

Variable	N	% (Unweighted)	% (Weighted)
Sample Size	10116	100.0	100.0
2010 SNAP Participation	763	7.5	7.3
High School or GED and Above	7827	77.4	82.7
Female	5074	50.2	46.8
Nonwhite Non-Hispanic	1962	19.4	14.2
Hispanic	957	9.5	7.1
Difficulty Dressing	1499	14.8	11.6
Adequate Food Budget	9356	92.5	92.2

Table 2
Age Model Frequencies

Variable	N	% (Unweighted)	% (Weighted)
Sample Size	10116	100.0	100.0
Third Age	6536	64.6	64.6
Fourth Age	2562	25.3	19.2
Young-old	3443	34.0	30.9
Middle-old	2897	28.6	20.6
Oldest-old	1390	13.7	9.8
Generic 55—64	2386	23.6	38.7
Generic 65—74	3443	34.0	30.9
Generic 75—84	2897	28.6	20.6
Generic 85—94	1267	12.5	9.1
Generic 95+	123	1.2	.7

Table 3
Descriptives (Unweighted)

Variable	Range	Min	Max	M	SD
Age	54	55	109	72.88	9.77
Household income	6197150.00	0.00	6197150.00	53455.42	114088.09
Household assets	28566000.00	-1165000.00	27401000.00	404124.01	899699.83
Household income (log-corrected)	6.79	0.00	6.79	4.45	0.66
Household assets (log-corrected)	7.44	0.00	7.44	4.61	1.76

Table 4
Descriptives (Weighted)

Variable	Range	Min	Max	M	SD
Age	53	56	109	69.67	9.87
Household income	6197150.00	0.00	6197150.00	63222.38	112311.88
Household assets	28566000.00	-1165000.00	27401000.00	449489.30	970946.40
Household income (log-corrected)	6.79	0.00	6.79	4.53	0.66
Household assets (log-corrected)	7.44	0.00	7.44	4.72	1.69

Control Model Logistic Regression Results

Results from Model A (see Table 5), including only control variables, suggest that individuals who were female (OR = 1.39, $p < .01$), nonwhite non-Hispanic (OR = 1.44, $p < .01$), Hispanic (OR = 1.19, $p < .01$), or had difficulty dressing (OR = 1.69, $p < .01$) had higher odds of receiving SNAP in 2010 compared to individuals who were male, white, non-Hispanic, or did not have difficulty dressing. The model also showed that those who graduated high school or had a GED (OR = 0.55, $p < .01$), reported adequate food budget in the past two years (OR = .35, $p < .01$), had lower income (OR = .86, $p < .01$), or had lower assets (OR = .74, $p < .01$) had lower odds of participating in SNAP in 2010 when compared to individuals who did not complete high school or have a GED, reported inadequate food budget in the past two years, had higher income, or had higher assets. The three strongest predictors of SNAP participation in 2010 were low levels of education, difficulty dressing, and an inadequate food budget in the past two years. Respondents who had at least a high school diploma or GED had lower odds (OR = .55, $p < .01$) of participating in SNAP in 2010 than individuals who did complete high school. Respondents who reported difficulty dressing had higher odds (OR = 1.69, $p < .01$) of participating in SNAP in 2010 than those who did not report difficulty dressing. Respondents who reported an adequate food budget in the past two years had lower odds (OR = .35, $p < .01$) of participating in SNAP than those who reported not having enough money for food in the past two years. The Hosmer-

Lemeshow goodness-of-fit test indicates that the model does not fit the data well ($p < .001$). The Nagelkerke pseudo R^2 for Model A was .21.

Table 5
Predictors of SNAP Receipt—Model A

Variable	β (S.E.)	Exp(β)	95% CI
Constant	.34 (.004)**	1.41	[.33, .35]
High School or GED and Above	-.61 (.001)**	.55	[-.61, -.60]
Female	.33 (.001)**	1.39	[.33, .33]
Nonwhite Non-Hispanic	.36 (.002)**	1.44	[.36, .36]
Hispanic	.18 (.002)**	1.19	[.17, .18]
Difficulty Dressing	.52 (.002)**	1.69	[.52, .53]
Adequate Food Budget	-1.06 (.002)**	.35	[-1.06, -1.05]
Household Income	-.15 (.001)**	.86	[-.16, -.15]
Household Assets	-.30 (.000)**	.74	[-.30, -.30]
Nagelkerke R^2		.21	
X^2		4174035.14	

Note. N = 9635. Hosmer-Lemeshow significance $p < .001$.

** $p < .01$

Between-Model Comparisons

Overall, the addition of the different conceptions of age into each model yielded very little change in effect sizes and the Hosmer-Lemeshow goodness-of-fit test (see Tables 6—9). When compared to Model A, all other models showed only a .01 point increase to .22 in Nagelkerke pseudo R^2 values, indicating that age, regardless of its conception, adds little to the predictive power of the 2010 SNAP participation model. The Hosmer-Lemeshow values remained significant ($p < .001$) in all models that included age, indicating that none of the models fit the data well.

Table 6
Predictors of SNAP Receipt—Model B

Variable	β (S.E.)	Exp(β)	95% CI
Constant	.35 (.004)**	1.42	[.34, .36]
Fourth Age (80+)	-.66 (.002)**	.52	[-.66, -.66]
Non Third or Fourth Age (55—59)	.34 (.002)**	1.41	[.34, .35]
High School or GED and Above	-.73 (.001)**	.48	[-.73, -.72]
Female	.41 (.001)**	1.51	[.41, .41]
Nonwhite Non-Hispanic	.30 (.002)**	1.35	[.29, .30]
Hispanic	.09 (.002)**	1.09	[.08, .09]
Difficulty Dressing	.61 (.002)**	1.85	[.61, .62]
Adequate Food Budget	-.96 (.002)**	.39	[-.96, -.95]
Household Income	-.16 (.001)**	.85	[-.16, -.16]
Household Assets	-.30 (.000)**	.74	[-.30, -.30]
Nagelkerke R ²		.22	
X ²		4391819.82	

Note. N = 9635. Hosmer-Lemeshow significance $p < .001$.

** $p < .01$

Table 7
Predictors of SNAP Receipt—Model C

Variable	β (S.E.)	Exp(β)	95% CI
Constant	.37 (.004)**	1.45	[.36, .38]
Middle-old (75—84)	-.28 (.002)**	.76	[-.28, -.27]
Oldest-old (85+)	-1.00 (.003)**	.37	[-1.00, -.99]
Non-model (55—64)	.15 (.001)**	1.16	[.15, .15]
High School or GED and Above	-.74 (.002)**	.48	[-.74, -.73]
Female	.42 (.001)**	1.52	[.41, .42]
Nonwhite Non-Hispanic	.30 (.001)**	1.35	[.30, .30]
Hispanic	.09 (.002)**	1.09	[.08, .09]
Difficulty Dressing	.61 (.002)**	1.83	[.60, .61]
Adequate Food Budget	-.94 (.002)**	.39	[-.95, -.94]
Household Income	-.16 (.001)**	.85	[-.16, -.16]
Household Assets	-.29 (.000)**	.75	[-.30, -.29]
Nagelkerke R ²		.22	
X ²		4393580.06	

Note. N = 9635. Hosmer-Lemeshow significance $p < .001$.

** $p < .01$

Table 8
Predictors of SNAP Receipt—Model D

Variable	β (S.E.)	Exp(β)	95% CI
Constant	.52 (.004)**	1.68	[.51, .53]
Ages 65—74	-.15 (.001)**	.86	[-.15, -.15]
Ages 75—84	-.43 (.002)**	.65	[-.43, -.42]
Ages 85—94	-1.10 (.003)**	.33	[-1.11, -1.10]
Ages 95+	-1.67 (.011)**	.19	[-1.69, -1.65]
High School or GED and Above	-.74 (.001)**	.48	[-.74, -.73]
Female	.42 (.001)**	1.52	[.42, .42]
Nonwhite Non-Hispanic	.30 (.002)**	1.35	[.30, .30]
Hispanic	.09 (.002)**	1.09	[.09, .09]
Difficulty Dressing	.61 (.002)**	1.84	[.61, .61]
Adequate Food Budget	-.94 (.002)**	.39	[-.94, -.94]
Household Income	-.16 (.001)**	.85	[-.16, -.16]
Household Assets	-.29 (.000)**	.75	[-.30, -.29]
Nagelkerke R ²		.22	
X ²		4396795.10	

Note. N = 9635. Hosmer-Lemeshow significance $p < .001$.

** $p < .01$

Table 9
Predictors of SNAP Receipt—Model E

Variable	β (S.E.)	Exp(β)	95% CI
Constant	2.42 (.006)**	11.19	[2.40, 2.43]
Age Continuous	-.03 (.000)**	.97	[-.03, -.03]
High School or GED and Above	-.76 (.002)**	.47	[-.77, -.76]
Female	.42 (.001)**	1.53	[.42, .43]
Nonwhite Non-Hispanic	.29 (.002)**	1.34	[.29, .29]
Hispanic	.08 (.002)**	1.08	[.07, .08]
Difficulty Dressing	.61 (.002)**	1.84	[.61, .62]
Adequate Food Budget	-.93 (.002)**	.39	[-.94, -.93]
Household Income	-.16 (.001)**	.85	[-.16, -.16]
Household Assets	-.29 (.000)**	.75	[-.29, -.29]
Nagelkerke R ²		.22	
X ²		4384651.39	

Note. N = 9635. Hosmer-Lemeshow significance $p < .001$.

** $p < .01$

The addition of age into the predictive model, however, did change the relationship between several control variables and 2010 SNAP receipt. For comparisons of odds ratios across models, see Table 10. Model B indicates that Fourth Age respondents had lower odds (OR = .52,

$p < .01$) and that those who were younger than Third Age had higher odds ($OR = 1.41, p < .01$) of receiving SNAP in 2010 when compared to Third Age participants. The addition of these age

Table 10
Summary of Odds Ratios

Variable	Model A	Model B	Model C	Model D	Model E
Constant	1.41	1.42	1.45	1.68	11.19
Fourth Age (80+)	-	.52	-	-	-
Non Third or Fourth Age (55—59)	-	1.41	-	-	-
Middle-old (75—84)	-	-	.76	-	-
Oldest-old (85+)	-	-	.37	-	-
Non-model (55—64)	-	-	1.16	-	-
Ages 65—74	-	-	-	.86	-
Ages 75—84	-	-	-	.65	-
Ages 85—94	-	-	-	.33	-
Ages 95+	-	-	-	.19	-
Age Continuous	-	-	-	-	.97
High School or GED and Above	.55	.48	.48	.48	.47
Female	1.39	1.51	1.52	1.52	1.53
Nonwhite Non-Hispanic	1.44	1.35	1.35	1.35	1.34
Hispanic	1.19	1.09	1.09	1.09	1.08
Difficulty Dressing	1.69	1.85	1.83	1.84	1.84
Adequate Food Budget	.35	.39	.39	.39	.39
Household Income	.86	.85	.85	.85	.85
Household Assets	.74	.74	.75	.75	.75
Nagelkerke R^2	.21	.22	.22	.22	.22
X^2	4174035.14	4391819.82	4393580.06	4396795.10	4384651.39

Note. $N = 9635$.

categories in Model B yielded changes in odds of more than 10 points for three of the control variables: gender, Hispanic, and difficulty dressing. Female respondents in Model B had 12-point higher odds of receiving SNAP in 2010 ($OR = 1.51, p < .01$) than female respondents in Model A ($OR = 1.39, p < .01$). Hispanic respondents in Model B showed a 10 point reduction in odds of receiving SNAP in 2010 ($OR = 1.09, p < .01$) when compared to those in Model A ($OR = 1.19, p < .01$). Finally, those who reported difficulty dressing saw a 16 point increase ($OR =$

1.85, $p < .01$) in odds of receiving SNAP in 2010 in Model B, when compared to those in Model A (OR = 1.69, $p < .01$).

Between Models B and C, changes in odds among control variables were almost nonexistent—less than 4 points for any given variable. However, Model C did reveal a decline in odds of receiving SNAP in 2010 as age increases. Oldest-old respondents had lower odds (OR = .37, $p < .01$) and middle-old respondents had lower odds of receiving SNAP in 2010 (OR = .76, $p < .01$) when compared to young-old respondents. Respondents younger than young-old respondents had higher odds of receiving SNAP in 2010 (OR = 1.16, $p < .01$) compared to young-old respondents.

Much like the comparison between Models B and C, changes in odds among control variables between Models C and D were almost nonexistent; only the odds ratio for difficulty dressing changed between Models C and D by .01 (OR = 1.84, $p < .01$). All categories of respondents over 65 in Model D had lower odds of receiving SNAP in 2010 when compared to those between 55 and 64. In comparison to those between 55 and 64, respondents over 95 and those between 85 and 94 had lower odds (OR = 0.19, $p < .01$) and lower odds (OR = 0.33, $p < .01$) of receiving SNAP in 2010, respectively. When compared to those between 55 and 64, respondents between 75 and 84 and respondents between 65 and 74 had lower odds (OR = .65, $p < .01$) and lower odds (OR = .86, $p < .01$) of receiving SNAP in 2010, respectively. Model E, like the others, yielded little change in the odds ratios among each control variable and 2010 SNAP receipt—less than 2 points for any given variable between Models D and E. Finally, results from Model E indicated that for every year that age increased, the odds of receiving SNAP in 2010 decreased (OR = .97, $p < .01$). Therefore, while the addition of age into the

predictive model for 2010 SNAP receipt had modest effects on some of the control variables, differing definitions of age seemed to have little effect on the control variables between models.

CHAPTER 5: DISCUSSION AND IMPLICATIONS

Results and Limitations

The results of the analyses conducted on all five models of SNAP participation indicated that the researchers should reject null hypotheses one through four and fail to reject null hypotheses five through seven that were stated at the end of Chapter 2. All models that included age as a predictor provided the same result—that for older adults over 55, the odds of SNAP participation decrease as age increases. Those in the Fourth Age category had lower odds of SNAP participation when compared to those in the Third Age category. Those in the oldest-old age category had lower odds of SNAP participation when compared to those in the young-old and middle-old categories. Those in the 95 and older decade-cohort had lower odds of SNAP participation when compared to those in younger cohorts. As continuous age increased, the odds of SNAP participation decreased. Further analyses indicated that the addition of age provided little additional predictive power to Model A, no matter if age was defined as Third and Fourth Ages (Baltes & Smith, 2003); young-, middle-, and oldest-old (LaPierre & Hughes, 2009; Neugarten, 1974; Rosenwaik, 1985; Zizza, Ellison, & Wernette, 2009); generic decade-cohorts; or as a continuous variable. Therefore, as age relates to SNAP participation, the definition of age seems not to matter. Although the current research fails to validate the importance of utilizing differing conceptions of age in regards to SNAP participation, these results cannot be generalized to other areas of gerontology research. Researchers should remain cognizant of the possible effects of various definitions of older age on research results. When possible, research should use the most sensitive age categories or compare different conceptions in order to attain a more accurate picture of actual outcomes for the population studied.

This study had various limitations. The researchers' decision to include only the oldest member of each household may have threatened the national representativeness of the sample. The loss of national representativeness may be indicated by the fact that the mean household income for the sample studied was above the national average (U.S. Census Bureau, 2010). Moreover, the early version of the 2010 HRS dataset did not include demographic data for those under 55 and may have also included some data errors; these limitations further lowered the total sample studied and the generalizability of the outcomes. In relation to statistical limitations, the research only reported point changes in odds ratios and Nagelkerke pseudo R^2 across models but did not conduct formal analyses comparing possible significant differences in those statistics. A conceptual limitation of the study was that the researchers explored SNAP participation rates among the whole sample, but did not explore SNAP participation of individuals who were likely to be eligible for benefits as in previous research conducted by Fuller-Thomson and Redmond (2008), Haider et al. (2003), and Wu (2009).

Relation to Literature

Results from this study showed that adults over 55 were disproportionately underrepresented in SNAP participation rates (participating at a rate of 7.3%), as this population made up approximately 25% of the population in the United States in 2010 (Howden & Meyer, 2011). The current study's finding that inadequate food budget strongly predicted SNAP participation in 2010 is similar to and in agreement with the result by Coleman-Jensen et al. (2011) that showed the majority of food insecure households participated in at least one government nutrition program in 2010. However, the measures of food insecurity used between the two studies were different. This study used a self-reported food budget adequacy in the past two years, in adults over 55, whereas the other used a measure of food insecurity in households

containing at least one adult over 65 in 2010; prevalence rates for food insecurity in both studies were about 8% (Coleman-Jensen et al., 2011).

Although validation of rational choice theories was not within the scope of the current study, results of the study did show some support for these theories and prior research. Across all models, experiencing food budget hardship remained a strong predictor of SNAP use, indicating that older adults factor potential economic benefit into their decision to participate in SNAP. These findings of economic utility as a decision-making factor in participating in social welfare are consistent with several other studies in this aspect (Blank & Ruggles, 1996; Daponte, Sanders, & Taylor, 1999; Wu, 2009). However, the strongest predictor across all models, difficulty dressing, is a physical limitation that is not typically encompassed in rational choice theory or bounded rationality (Kroneberg & Kalter, 2012; Mallard, 2012). Rather than mainly focusing on social, cognitive, and economic factors, rational choice theories may benefit from the consideration of physical factors as a cost in the typical cost-benefit framework used in these theories (Kroneberg & Kalter, 2012; Mallard, 2012; Moffitt, 1983). Indeed, researchers like Fuller-Thomson and Redmond (2008) and Haider et al. (2003) already conceptualize physical factors as a type of cost to participation in SNAP.

In relation to similar SNAP participation research focused on older adults (Fuller-Thomson, 2008; Haider et al., 2003; Wu, 2009), this study found similar results indicating that SNAP participation among older adults declined as age increases. In line with findings by Haider et al. (2003), the current study found that educational attainment, gender, race, Hispanic race, difficulty dressing, adequate food budget, income, and assets all significantly impacted SNAP participation among older adults using a model that does not control for cognitive impairment. The current study also found similar results to Wu (2009), finding that older adults who are male,

white, higher-educated, had higher levels of economic well-being, and not disabled were less likely to use FSP. Unlike the current research, Wu (2009) showed that higher FSP benefit amounts, family size, and SSI or TANF participation positively impacted FSP participation. The latter list of variables were not included in the current study. Additionally, Wu (2009) found that participation in ENP, incorrect eligibility information, being married negatively impacted FSP participation among older adults. Logistic regression results presented the study by Fuller-Thomson and Redmond (2008), agreed with some of the logistic regression results presented previously; being female, Hispanic, African American, younger, or having lower education levels significantly positively affected the odds of FSP participation among older adults over 65. Opposite from the current research, Fuller-Thomson and Redmond (2008) showed that impairment in everyday activities (including dressing) did not significantly impact the odds of participating in FSP. Other significant results from that same study that were not explored in the current study indicated that not speaking English, having children at home, receiving SSI, being in a higher poverty quartile, renting a home, having functional limitations, and having employment difficulties all positively impacted the odds of FSP participation.

Implications for Future Research

The researchers offer several suggestions for future studies of SNAP participation among older adults. Findings from the current study suggest that future SNAP studies with older adults should include physical disability indicators as possible predictors for participation, as in some previous studies (Fuller-Thomson & Redmond, 2008; Haider et al., 2003). Furthermore, the current research adds to the well-established body of evidence that shows SNAP participation declines with age (Fuller-Thomson & Redmond, 2008; Haider et al., 2003; Leftin et al., 2011; Wu, 2009). Future research must focus on exploring the factors influencing older adults’

participation in SNAP, as these factors are not well-understood. Possible areas of inquiry include social stigma, the expectation of lower benefits, receipt of other nutrition programs, complex SNAP applications, and geographical barriers, similar to several previous studies (Fuller-Thomson & Redmond, 2008; Gabor et al., 2002; Wu, 2009).

Implications for Policymakers and Practitioners

In light of the findings of the current research, policymakers and practitioners must pay more attention to the contribution of physical limitations to SNAP take-up in older adults. In recent years, some states have begun participating in the SNAP Combined Application Project (SNAP-CAP), which combines SNAP and SSI applications for persons who are disabled or over 60; SNAP-CAP applications do not require an in-person interview at a local SNAP office (USDA, 2012d). One study (Cunnyngham, 2010) showed that SNAP participation rates among eligible older adults increased in states participating in SNAP-CAP programs. As of 2010, only 18 states participated in SNAP-CAP (USDA, 2012d). Thus, the researchers suggest that policymakers advocate for the expansion of SNAP-CAP to all other states. Direct service practitioners must become more aware that nutrition assistance may be better predicted by functional limitations, rather than by economic factors alone. As such, practitioners also must assist and advocate for their older clients to access SNAP-CAP where available.

CHAPTER 6: CONCLUSION

The purpose of this thesis was to explore the relationship between four differing conceptualizations of age and SNAP participation. The study began with a literature review outlining previous research and statistics about poverty; hunger and food security; OAA; SNAP history, intent, eligibility, and participation; rational choice theories; factors affecting SNAP participation; and age categorization. As stated previously, the needs of older adults will continue to grow as this group continues to grow. Thus, future research must focus on ways to best serve the unique needs of this growing population. Using past research on SNAP participation and age categorization as a guide, the current study attempted to uncover any possible differences in participation rates related to four separate definitions of age. Although different conceptions of age had little effect on predicting SNAP participation rates among older adults, older age was associated with a lower likelihood of SNAP use in model. This thesis added to the body of knowledge by exploring a topic that has been under-researched in the past.

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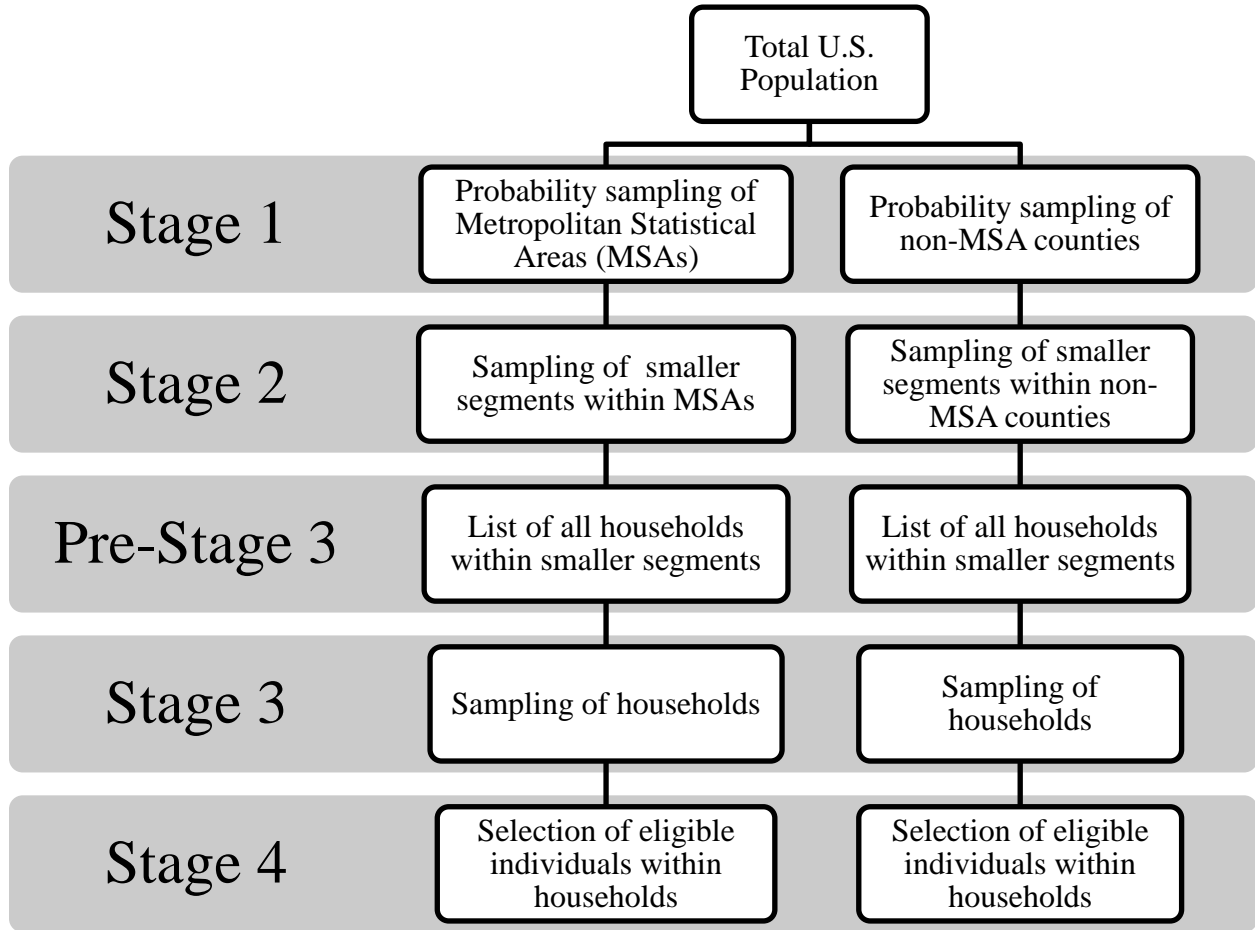
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APPENDIX A



APPENDIX B

Application for Exemption from Institutional Oversight

Unless qualified as meeting the specific criteria for exemption from Institutional Review Board (IRB) oversight, ALL LSU research/projects using living humans as subjects, or samples or data obtained from humans, directly or indirectly, with or without their consent, must be approved or exempted in advance by the LSU IRB. This Form helps the PI determine if a project may be exempted, and is used to request an exemption.



Institutional Review Board
Dr. Robert Mathews, Chair
203 B-1 David Boyd Hall
Baton Rouge, LA 70803
P: 225.578.8692
F: 225.578.6792
irb@lsu.edu | lsu.edu/irb

- > Applicant, Please fill out the application in its entirety and include the completed application as well as parts A-E, listed below, when submitting to the IRB. Once the application is completed, please submit two copies of the completed application to the IRB Office or to a member of the Human Subjects Screening Committee. Members of this committee can be found at [http://appl003.lsu.edu/osp/osp.nsf/\\$Content/Humans+Subject+Committee?OpenDocument](http://appl003.lsu.edu/osp/osp.nsf/$Content/Humans+Subject+Committee?OpenDocument)
- > A Complete Application Includes All of the Following:
 - (A) Two copies of this completed form and two copies of parts B thru E.
 - (B) A brief project description (adequate to evaluate risks to subjects and to explain your responses to Parts 1 & 2)
 - (C) Copies of all instruments to be used.
 - If this proposal is part of a grant proposal, include a copy of the proposal and all recruitment material.
 - (D) The consent form that you will use in the study (see part 3 for more information.)
 - (E) Certificate of Completion of Human Subjects Protection Training for all personnel involved in the project, including students who are involved with testing or handling data, unless already on file with the IRB.
Training link: (<http://cme.cancer.gov/clinicaltrials/learning/humanparticipant-protections.asp>.)

1) Principal Investigator: Dr. Michelle Livermore Rank: Associate Professor Student? Y/N N

Dept.: Social Work Ph: 225-578-1015 E-mail: mliver@lsu.edu

2) Co Investigator(s): please include department, rank and e-mail for each
If student, please identify and name supervising professor in this space
Jennifer Geiger, student

3) Project SNAP Use among Older Adults
Title: _____

4) LSU Proposal? (yes or no) No If Yes, LSU Proposal Number _____
Also, if YES, either ☐ This application completely matches the scope of work in the grant
OR
☐ More IRB Applications will be filed later

5) Subject pool (e.g. Psychology Students) Older adults
• Circle any "vulnerable populations" to be used: (children <18; the mentally impaired, pregnant women, the aged, other). Projects with incarcerated persons cannot be exempted.

6) PI Signature Michelle Livermore ** Date 3/12/13 (no per signatures)
**I certify my responses are accurate and complete. If the project scope or design is later changed I will resubmit for review. I will obtain written approval from the Authorized Representative of all non-LSU institutions in which the study is conducted. I also understand that it is my responsibility to maintain copies of all consent forms at LSU for three years after completion of the study. If I leave LSU before that time the consent forms should be preserved in the Departmental Office.

Effective August 1, 2007, all Exemptions will expire three years from date of approval, unless a continuation report, found on our website, is filed prior to expiration date

Screening Committee Action: Exempted ☒ Not Exempted _____ Category/Paragraph 4A/B
Reviewer TPAG Signature [Signature] Date 3-12-13

Study Exempted By:
Dr. Robert C. Mathews, Chairman
Institutional Review Board
Louisiana State University
203 B-1 David Boyd Hall
Baton Rouge, LA 70803
225-578-8692 | www.lsu.edu/irb
Exemption Expires: 3/11/2016

IRB# E822 LSU Proposal# _____
Complete Application
Human Subjects Training

VITA

Jennifer Geiger was born and raised in Houma, Louisiana, and attended Coteau-Bayou Blue Elementary School, Evergreen Junior High School, and H. L. Bourgeois High School.

Jennifer graduated from Tulane University with a Bachelor of Science degree in psychology with a minor in philosophy in May 2011. She continued her studies at Louisiana State University and obtained a Master of Social Work degree in May 2013.

Jennifer currently lives in Baton Rouge, Louisiana with her roommate Addison. Jennifer plans to continue her research in gerontology while pursuing a doctorate degree in social work.